

What is the Pine Wilt Initiative?

The Pine Wilt Initiative is a cooperative effort to address the continued spread of pine wilt disease here in the state. Cooperators include the Kansas Department of Agriculture, Kansas Forest Service, Kansas State University and Extension Service, and the many landowners and horticultural groups who have an interest in maintaining pine health.

GOAL: To limit, delay, and mitigate the spread of pine wilt disease into the western half of Kansas.

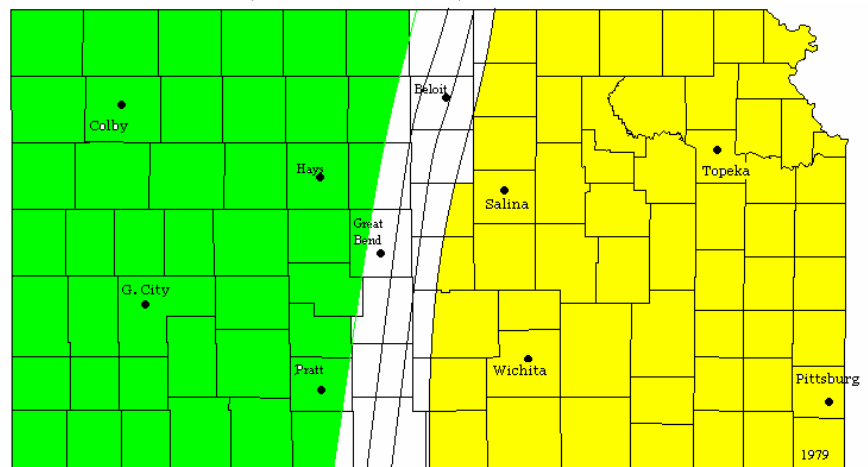
REASONING: Pines represent a highly important part of the tree population in the western half of Kansas. The trees are highly valued in urban and farmstead settings as a landscape tree and are common in windbreaks around farms and in the large scale conservation plantings. With the establishment of pine wilt in plantings of Austrian and Scotch pines, there will be significant tree death over time requiring the removal and replacement of trees that are less desirable. The removal and replacement of such diseased trees can be of considerable costs to urban and rural homeowners, government agencies, and farmers. Information from surveillance data and state diagnostic records indicate that the disease is known not to be established in the western half of the state. If left unchecked the disease will likely become established in communities and counties in the eastern area of the area of concern over the next couple of years and given the right circumstances across much of the area. The nematode, the vector beetle, and the subsequent spread of the disease can be stopped by removing the infected tree and destroying the wood in a timely manner.

The following are general categories of mitigation activities to be addressed:

- Surveillance
- Outreach
- Communication
- Direct Intervention
- Best management practices

SURVEILLANCE:

Resources of the respective programs from the Kansas Department of Agriculture, Kansas Forest Service, Kansas Extension Service, and first observers such as homeowners, arborists, and master gardeners will be used to monitor pine health in the pine wilt free area. Pine wilt symptoms develop after feeding of the pine sawyer on shoots of pine after new growth. These symptoms include a rapid wilting of the tree, brown to tan discoloration of needles, and death. This onset of symptoms develops 4 to 6 weeks after feeding. Historically symptoms begin developing anytime after July 1 but usually toward the end of July. Feeding by the pine sawyer on pines and subsequent symptom development continues through October and maybe later depending on weather conditions. Surveillance should continue from July 1 through



Green and white areas are considered not infested with pine wilt. Substantial plantings of Scotch and Austrian pines are in communities, parks, homesteads, and windbreaks.

These western Kansas areas are targeted by the Pine Wilt Initiative to slow or stop the spread of the disease complex.

2009 2008 2007
Estimated range of pine wilt if left unchecked

Pine wilt infested areas are in yellow. The first find in Kansas was in 1979 in Cherokee County. It was found after that along the eastern border with Missouri at several locations in 1979 and 1980.

December. If trees infected are found, then cooperators can work together to get the trees removed and limit any establishment of the disease complex.

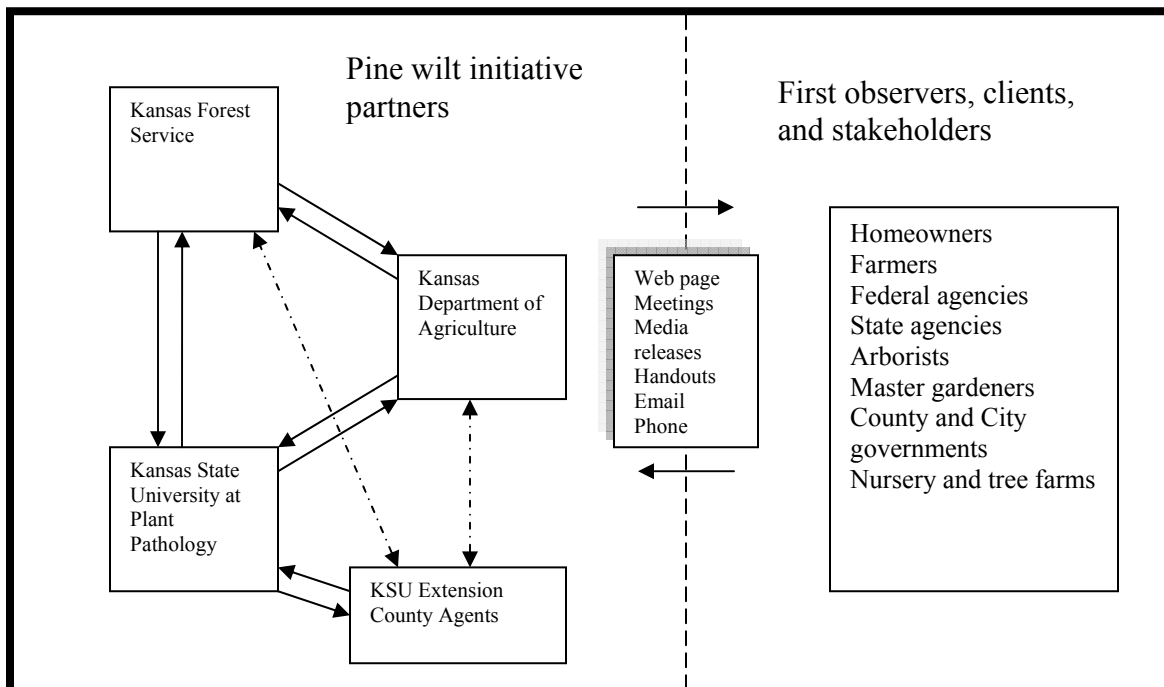
OUTREACH:

Outreach activities will be conducted throughout the year by various means. It is critically important to communicate information regarding distribution of the pest, symptoms, sampling, best management practices, and the need for real time data.

COMMUNICATION:

Below is a flow chart showing the movement of information. The goal is to have two way communications from the field to the office and to the client. Efficiency of resources will be greatest with good communication. Data records will be recorded and retained by the Kansas Department of Agriculture along with diagnostic records at the Great Plains Diagnostic Lab at KSU.

A time line will be developed of vector and disease to support surveillance, outreaches, and direct intervention activities.



DIRECT INTERVENTION, QUARANTINES, and RELATED ACTIVITIES

Currently, direct intervention activities are targeted at infected pine wilt trees in areas where the disease is not established. Kansas Department of Agriculture will continue to evaluate positive sites in the transition zone and in western Kansas for use of emergency pest response funds to support removal of the trees in private ownership situations. We have spent \$1,000 of a \$3,000 approval from the Secretary of Agriculture. This year, trees were removed at Colby (by the landowner), Mitchell County (by the landowner), and Great Bend (by emergency funds).

The criteria for a site to be eligible for use of the emergency funds are:

- A 30 mile distance more or less from known infested areas
- The infestation is small in size.
- There was some indication of the potential for an artificial introduction.
- The positive sample was taken by an official of KSU extension, KFS, or KDA.
- The costs of removal of the trees would be a burden to the landowner.
- The trees can be safely removed and success of eliminating the disease is high.

BEST MANAGEMENT PRACTICES:

- Stressed trees attract pine sawyer beetles. Crowding of trees and drought conditions should be avoided. Pines when possible should be watered during stressful periods.
- Plant a mix of tree species. Ponderosa pines should be considered in a pine planting since we have reason to believe that those trees possess some resistance to the disease complex.
- Get confirmation of the disease in most situations. Some other reasons such as drought, bark beetles, cankers, root rots, and herbicide damage may cause death of the tree. A sample should consist of a couple of branch pieces about 1 foot long taken next to the trunk which are expressing symptoms. The samples should be sealed in a plastic bag and sent to a qualified lab.
- If the disease is confirmed, the tree should be removed as soon as possible. Owners who are hiring out the work should probably wait for removal of trees after mid October to see if any other trees are infected.
- Infected trees need to be disposed of by burning, chipping, or burial. The primary goal is to destroy the larvae and pupa of the pine sawyer.
- Insecticides are generally not cost feasible in spraying for the adult pine sawyer who begin emergence in May and live for two months.
- Removal of infected trees from July to February will destroy the nematode and any insect stages in the tree. It will break the cycle of infection.
- Landowners should check pines periodically. Symptoms develop under stress periods. It is recommended that pines be monitored every two months.
- Wood of infected pines should not be used as firewood unless it is on the original site. The movement of this wood to a new area could move the pine sawyer and the nematode and start a new disease cycle.
- Nurseries should be constantly aware of any pines that die or start decline during the summer and fall months. Those trees should be removed and disposed of in a recommended manner so not to attract pine sawyers. Plant health inspections by the Kansas Department of Agriculture will keep a close eye on those nurseries that are shipping trees out of their local vicinity.